

REMARKS

Claims 1, 3-10, 12-14, 16-18, 20-22, and 24-27 are now pending in the application. Claims 1, 3-10, 12-14, 16-18, 20-22, and 24-27 stand rejected. Claims 2, 11, 15, 19 and 23 have been cancelled. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 1, 9, 10, 17, 18 and 27 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Parrella et al. (U.S. Pat. No. 6,215,884). This rejection is respectfully traversed.

A. Regarding Claims 1 and 9, Claim 1 has been amended, as set forth above, to recite, "A high fidelity sound system for a mobile platform, said system comprising: a plurality of selected interior passenger cabin panels, each panel having acoustical characteristics specific to the respective panel; a plurality of like exciters, at least one like exciter directly affixed to each selected panel, the like exciters adapted to resonate each selected panel to generate sound waves within a frequency range determined by the acoustical characteristics of the respective panel ; and a processing center adapted to transmit and dynamically process audio signals to each like exciter such that: the sound waves generated by each selected panel are contoured to be within the frequency range determined by the acoustical characteristics of the respective panel and the amplitudes of the sound waves having frequencies near a lower outer boundary range of each bandwidth are progressively attenuated and the sound waves having frequencies near an upper outer boundary range of each bandwidth are progressively attenuated."

Applicant respectfully submits that Parrella et al. does not describe, show or suggest a high fidelity sound system for a mobile platform as recited in amended Claim 1. For example, Applicant respectfully submits that Parrella et al. does not describe, show or suggest a high fidelity sound system for a mobile platform including a plurality of like exciters directly affixed to selected mobile platform interior panels to

resonate each selected panel to generate sound waves within a frequency range determined by the acoustical characteristics of the respective panel.

Rather, Parrella et al. describes a piezoelectric patch 14 bonded to the center of coupling layer in the form of a small, thin plastic elliptical disc 15 that provides a transition to a larger elliptical disc 16 that is bonded to a panel 17. FIG. 10 illustrates the locations of the flat panel speakers in a passenger cabin, in this case an automobile. Four mid range panels 74, 75, 76, 77 are placed within, or form part of, the roof liner of the automobile, and one possibly in each door 78, 79. Pairs of tweeters 80, 81, 82, 83 are also placed in, or form part of the roof liner. Tweeters 84 can also be placed on the sides of the passenger cabin frame as shown.

Thus, Parrella et al. does not describe, show or suggest like exciters affixed directly to a mobile platform interior panel, but rather various piezoelectric patches bonded to two layers of plastic elliptical discs bonded to a panel to provide various mid range panels and tweeter panels placed in, or form part of various panels. Therefore, the piezoelectric patches of Parrella et al. are not directly affixed to selected mobile platform interior panels, and are not adapted to resonate each selected panel to generate sound waves within a frequency range determined by the acoustical characteristics of the respective panel.

Additionally, Applicant respectfully submits that Parrella et al. does not describe, show or suggest a high fidelity sound system for a mobile platform further including a processing center adapted to transmit and dynamically process audio signals to each like exciter such that the sound waves generated by each selected panel are contoured to be within the frequency range determined by the acoustical characteristics of the respective panel and the amplitudes of the sound waves having frequencies near a lower outer boundary range and an upper outer boundary range of each bandwidth are progressively attenuated.

Rather, Parrella et al. describes a crossover network 106 used to split the audio into its high and lower frequency components as it is transmitted from the PA System 107. Applicant respectfully submits that the claimed invention, as recited in

amended Claim 1, does not include a crossover network, as the Office suggests. Rather, amended Claim 1 recites a processing center that dynamically processes audio signals such that the sound waves generated by each selected panel are contoured to be within the frequency range determined by the acoustical characteristics of the respective panel. The processing center further dynamically processes the audio signal such that the amplitudes of the sound waves having frequencies near a lower outer boundary range and an upper outer boundary range of each bandwidth are progressively attenuated. As the Office points out, crossover networks are known. One skilled in the art readily understands that a crossover network generally includes inductors and resistors that merely filter signals to operate various speakers within predetermined statically fixed frequency ranges. For example, a crossover network is constructed to provide a statically fixed frequency range for tweeters of 2k-30k Hz, 200k, for midrange speaker of 200-4k Hz and for woofers of 35-3.2k Hz. Applicant respectfully submits that amended Claim 1 recites, as supported in the present specification, a high fidelity sound system including a processing center that dynamically processes audio signals to each like exciter such that the sound waves generated by each selected panel are contoured to be within the frequency range determined by the acoustical characteristics of the respective panel. That is, the processing center processes the audio signals sent to each exciter so that the sound produced by the respective panel is within a frequency range determined by the acoustical characteristics of the respective panel. The processing center does not merely filter signals to be within predetermined static frequency ranges, as does a typical crossover described in Parrella et al.

Additionally, the processing center recited in amended Claim 1, dynamically processes the audio signal such that the amplitudes of the sound waves having frequencies near a lower outer boundary range and an upper outer boundary range of each bandwidth are progressively attenuated. Applicant respectfully submits that Parrella et al. does not describe, show or suggest progressively attenuating sound waves having frequencies near a lower outer boundary range and an upper outer boundary range of the bandwidth of the respective panel as determined by the acoustical characteristics of the respective panel.

Accordingly, Applicant respectfully submits that Parrella et al. merely describes a typical classic three way loudspeaker system that incorporates piezoelectric patches to construct speaker panels, wherein each specific panel is designed to produce sounds within one of a standard predetermined static high, midrange or low frequency range, and does not describe, show or suggest a high fidelity sound system for a mobile platform as recited in amended Claim 1.

Furthermore, since amended Claim 1 recites limitations for which the Office relied upon Kolster (US Pat. No. 1,675,031) in the present Office Action for a §103 rejection, Applicant respectfully submits that Kolster does not describe, show or suggest a high fidelity sound system for a mobile platform as recited in amended Claim 1. For example, Kolster does not describe, show or suggest a high fidelity sound system for a mobile platform including a processing center that dynamically processes the audio signal such that the amplitudes of the sound waves having frequencies near a lower outer boundary range and an upper outer boundary range of each bandwidth are progressively attenuated. Rather, Kolster describes a system including a plurality of vacuum tube electrical units 125, 225 and 325 that output energy into mechanical vibrations at certain points along the voice frequency range of 50 to 5000 cycles. Figure 2 of Kolster illustrates response curves for each electrical unit 125, 225 and 325. The curves 1, 2 and 3 show the response of the individual units 125, 225 and 325 at different voice frequencies for *constant* input of energy. Kloster also describes, at lines 71-83, that for a given energy input, the response/frequency curves will *fall off* at the lower and higher frequencies. Thus, Applicant respectfully submits that Kloster does not describe, show or suggest a processing center that dynamically processes the audio signal such that the amplitudes of the sound waves having frequencies near a lower outer boundary range and an upper outer boundary range of each bandwidth are progressively attenuated. Rather, Kloster describes a typical cross over network that does nothing more than drive three diaphragms 130, 230 and 330 respectively at three different voice frequency ranges to reduce distortion.

Therefore, for at least the reasons set forth above, Applicant submits that amended Claim 1 is patentable over Parrella et al. and Parrella in view of Kloster.

Claim 9 depends from amended Claim 1, when the recitations of Claim 9 are considered in combination with the recitations of amended Claim 1, Applicant respectfully submits that Claim 9 is likewise patentable over the cited references.

B. Regarding Claims 10 and 17, Claim 10 has been amended, as set forth above, to recite limitations similar to those recited in amended Claim 1. In accordance with the remarks set forth above, with regard to amended Claim 1, Applicant respectfully submits that amended Claim 10 is likewise patentable over Parrella et al. and Parrella in view of Kloster.

Claim 17 depends from amended Claim 9, when the recitations of Claim 17 are considered in combination with the recitations of amended Claim 9, Applicant respectfully submits that Claim 17 is likewise patentable over the cited references.

C. Regarding Claims 18 and 27, Claim 18 has been amended, as set forth above, to recite limitations similar to those recited in amended Claim 1. In accordance with the remarks set forth above, with regard to amended Claim 1, Applicant respectfully submits that amended Claim 18 is likewise patentable over Parrella et al. and Parrella in view of Kloster.

Claim 27 depends from amended Claim 18, when the recitations of Claim 27 are considered in combination with the recitations of amended Claim 18, Applicant respectfully submits that Claim 27 is likewise patentable over the cited references.

For at least the reasons set forth above, Applicant respectfully requests that the §102 rejections of Claims 1, 9, 10, 17, 18 and 27 be withdrawn.

REJECTION UNDER 35 U.S.C. § 103

A. Claims 3, 16 and 24 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Parrella et al. (U.S. Pat. No. 6,215,884) in view of Kloster (U.S. Pat. No. 1,675,031) and Modafferi (U.S. Pat. No. 4,771,466). This rejection is respectfully traversed.

Claims 3, 16 and 24 respectively depend from amended Claims 1, 10 and 18, which, as set forth above, Applicant submits are patentable over the cited references.

Accordingly, Applicant further submits that amended Claims 1, 10 and 18 are also patentable over the Parrella et al. in view of Kloster and Modafferi.

When the recitations of Claims 3, 16 and 24 are considered in combination with the respective amended Claims 1, 10 and 18, Applicant submits that Claims 3, 16 and 24 are likewise patentable over Parrella et al. in view of Kloster and Modafferi.

For at least the reasons set forth above, Applicant respectfully requests that the §103 rejections of Claims 3, 16 and 24 be withdrawn.

B. Claims 4, 5 and 25 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Parrella et al. (U.S. Pat. No. 6,215,884) in view of Kloster (U.S. Pat. No. 1,675,031), Modafferi (U.S. Pat. No. 4,771,466) and Takahashi et al. (U.S. Pat. No. 4,229,619). This rejection is respectfully traversed.

Claims 4 and 5 depend from amended Claim 1 and Claim 25 depends from amended Claim 18. As set forth above, Applicant submits that amended Claims 1 and 18 are patentable over the cited references. Accordingly, Applicant further submits that amended Claims 1 and 18 are also patentable over the Parrella et al. in view of Kloster, Modafferi and Takahashi et al.

When the recitations of Claims 4, 5 and 25 are considered in combination with the respective amended Claims 1 and 18, Applicant submits that Claims 4, 5 and 25 are likewise patentable over Parrella et al. in view of Kloster, Modafferi and Takahashi et al.

For at least the reasons set forth above, Applicant respectfully requests that the §103 rejections of Claims 4, 5 and 25 be withdrawn.

C. Claims 6, 7, 12, 13, 20 and 21 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Parrella et al. (U.S. Pat. No. 6,215,884). This rejection is respectfully traversed.

Claims 6 and 7 depend from amended Claim 1, Claims 12 and 13 depend from amended Claim 11 and Claims 20 and 21 depend from amended Claim 18. As set forth above, Applicant submits that amended Claims 1, 10 and 18 are patentable over Parrella et al.

When the recitations of Claims 6, 7, 12, 13, 20 and 21 are considered in combination with the respective amended Claims 1, 10 and 18, Applicant submits that Claims 6, 7, 12, 13, 20 and 21 are likewise patentable over Parrella et al.

For at least the reasons set forth above, Applicant respectfully requests that the §103 rejections of Claims 6, 7, 12, 13, 20 and 21 be withdrawn.

D. Claims 8, 14 and 22 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Parrella et al. (U.S. Pat. No. 6,215,884) in view of Azima et al. (U.S. Pat. No. 6,324,294). This rejection is respectfully traversed.

Claims 8, 14 and 22 respectively depend from amended Claims 1, 10 and 18, which, as set forth above, Applicant submits are patentable over the cited references. Accordingly, Applicant further submits that amended Claims 1, 10 and 18 are also patentable over the Parrella et al. in view of Azima et al.

When the recitations of Claims 8, 14 and 22 are considered in combination with the respective amended Claims 1, 10 and 18, Applicant submits that Claims 8, 14 and 22 are likewise patentable over Parrella et al. in view of Azima et al.

For at least the reasons set forth above, Applicant respectfully requests that the §103 rejections of Claims 8, 14 and 22 be withdrawn.

E. Claims 4, 5 and 25 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Parrella et al. (U.S. Pat. No. 6,215,884) in view of Kloster (U.S. Pat. No. 1,675,031), Modafferi (U.S. Pat. No. 4,771,466), Takahashi et al. (U.S. Pat. No. 4,229,619) and Azima et al. (U.S. Pat. No. 6,324,294). This rejection is respectfully traversed.

Claims 4 and 5 depend from amended Claim 1 and Claim 25 depends from amended Claim 18. As set forth above, Applicant submits that amended Claims 1 and 18 are patentable over the cited references. Accordingly, Applicant further submits that amended Claims 1 and 18 are also patentable over the Parrella et al. in view of Kloster, Modafferi, Takahashi et al and Azima et al.

When the recitations of Claims 4, 5 and 25 are considered in combination with the respective amended Claims 1 and 18, Applicant submits that Claims 4, 5 and 25 are

likewise patentable over Parrella et al. in view of Kloster, Modafferi, Takahashi et al. and Azima et al.


For at least the reasons set forth above, Applicant respectfully requests that the §103 rejections of Claims 4, 5 and 25 be withdrawn.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (314) 726-7525.

Respectfully submitted,

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By: 
Scott T. Gray, Reg. No. 48,891

HARNESS, DICKEY & PIERCE, P.L.C.
7700 Bohomme, Suite 400
St. Louis, MO 63105
314-726-7500